grounds of the method, it is a perfect method of interpolation. The analytical investigation, however, shows that, for the mere purpose of interpolation, the process might be modified by altering the coefficients of V without affecting its form; but it indicates at the same time that such modifications have no definite analogy with that process by which weight is assigned to astronomical observations, and, from their arbitrary character, lead to results which cannot properly be regarded as expressions of probability in any sense.

XVI. "On Simultaneous Differential Equations in which the number of Variables exceeds by more than unity the number of the Equations." By GEORGE BOOLE, Esq., F.R.S. Received June 19, 1862.

(Abstract.)

This paper contains the proof, with some applications, of a method described in a paper bearing nearly the same title which was published in the 'Proceedings of the Royal Society' for March 6, 1862.

XVII. "On the Calculus of Symbols."—Third Memoir. By W. H. L. RUSSELL, Esq., A.B. Communicated by Professor STOKES, Sec. R.S. Received June 18, 1862.

(Abstract.)

The following paper is a continuation of the two preceding Memoirs on the same subject. It has a fourfold object. In the first place, I calculate the general values of the coefficients in the Binomial Theorem given in the first Memoir. In the next place, I give an expression for the form of the coefficient of the general term of the multinomial theorem as previously explained. I then give a theorem for the multiplication of symbolical factors emanating from each other after a given law; and lastly, I investigate a binomial theorem, reciprocal to the binomial theorem already considered.